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■

CONTROL OF AIR POLLUTION FROM NEW MOTOR VEHICLES AND NEW MOTOR ENGINES

Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

[FRL-272-3]

PART 85—CONTROL OF AIR POLLUTION FROM NEW MOTOR VEHICLES AND NEW MOTOR VEHICLE ENGINES

Certification of New Vehicles Intended for Initial Sale at High Altitude—1977 Model Year

On October 12, 1973, EPA published a notice of proposed rulemaking (NPRM) which would require that new motor vehicles offered for sale in high altitude regions in the Nation be certified for compliance with Federal emission standards at high altitude. The NPRM addressed the certification procedures for high altitude vehicles and the problems which occur when a vehicle designed to comply with emission standards at sea level is operated at high altitude. The NPRM also solicited public comment to determine if significant portions of the established test procedures were irrelevant or impractical, and to confirm that the problem of vehicle emissions at high altitude was serious enough to warrant additional Federal regulation of new motor vehicles offered for sale at high altitude.

The basic purpose of the regulations promulgated today is to require that manufacturers demonstrate through the certification process that vehicles that will be sold for initial licensing, registration, or titling at high altitudes are capable of meeting emission standards at such altitude. The Clean Air Act requires that all new vehicles, wherever sold or operated, meet the section 202 emission standards. In recognition of the fact that some vehicles may not meet the applicable emission standards when operated at high altitude, EPA is promulgating regulations which require that a vehicle manufacturer demonstrate through certification procedures that appropriate prototype vehicles meet emission standards at high altitudes.

Some manufacturers are expected to meet standards at high altitude by the production of two types of vehicles, one with a fixed calibration to meet the section 202 standards at high altitude and another calibrated to meet the standards at a nominally low altitude. Other manufacturers may produce automatically compensated vehicles (i.e., vehicles that meet standards at all altitudes).

The first approach (fixed calibration) presents a difficult situation in terms of enforcement and ultimate fulfillment of the goals of the Act. EPA has no assurance that the high altitude car will meet standards at low altitude, nor does it have assurance that a low altitude car will conform at high altitude. Indeed, there is reason to believe that cars designed and calibrated to meet the section 202 standards only at high altitude will have to be modified in order to meet the standards when operated at an altitude other than that intended by the original design (i.e., low altitude). An apparent burden which EPA must assume under this approach is to assure that only high altitude cars are sold at high altitude.

To assure that manufacturers produce vehicles which comply with standards when sold and in use, Congress enacted section 207 of the Act. Section 207(a) (the emission control warranty) provides that each vehicle must be warranted to meet the standards at the time of sale. Similarly, any determination made under section 207(c), which authorizes the recall of nonconforming vehicles at any altitude, should be based on conformance of in-use vehicles with the section 202 standards where the vehicles are in-use.

Thus, even though EPA only requires, through certification, that vehicles demonstrate before sale compliance with the emission standards at two relatively discrete altitudes, the manufacturer is required by the Act to produce vehicles that meet the applicable emission standards wherever sold and operated. While enforcement of the sale of high altitude vehicles in high altitude locations will not be attended by an extensive governmental program involving monitoring, reporting, and auditing, EPA may take the following actions regarding noncompliance:

1. EPA may bring legal action under sections 203(a) and 205 of the Act against any manufacturer who offers for sale or sells for initial titling or sale at high altitude any vehicle which is not covered by a certificate of conformity for high altitude.

2. EPA may also require a manufacturer, pursuant to section 207(c), to recall and modify any class or category of vehicles which EPA determines does not conform to the section 202 standards when in actual use.

3. Any manufacturer who sells a vehicle at any elevation which does not meet the standards at that elevation will be liable under the warranty of section 207(a). To give impetus to this deterrent to selling nonconforming vehicles, EPA, the state, or any other governmental unit may joint the claimant (i.e., the vehicle owner) in order to establish that the vehicle in question was not designed, built, and equipped so as to conform at the time of sale with the section 202 standards. Any concerned state may establish inspection or testing procedures designed to determine whether in-use vehicles are designed to meet standards at its altitude.

The regulations reflect the Agency's determination that liability for the sale of nonconforming vehicles should remain with the manufacturer. In this respect, the regulations clearly indicate the locations in which high altitude vehicles must be sold, and place the responsibility for assuring that low altitude vehicles are in fact not sold at high altitude locations directly on the manufacturer.

The NPRM specified that only vehicles certified for sale at high altitude may be sold in locations above 1219 meters (4000 feet) in elevation, and that vehicles certified for sale at low altitude must be sold exclusively in locations below 1219 meters (4000 feet). The final regulations have been revised to reflect the following two considerations:

1. A vehicle certified for sale only at high altitude using a fixed calibration will have been modified to provide for leaner (less fuel to air) mixtures. When such a vehicle is driven at low altitude, the mixture is leaned even further due to the greater density of air at lower elevations. This extremely lean-carbureted vehicle would, in all probability, drive poorly and have poor fuel economy. It would not be in the best interest of a vehicle manufacturer to sell a poorly performing high altitude vehicle in a low altitude location.

2. It is difficult to determine whether it is best, in terms of emission and fuel economy performance, to sell a high altitude or low altitude vehicle at locations slightly below 1219 meters (4000 feet). The determination in this regard may vary from one vehicle design to another. Thus, the manufacturer should be permitted to sell at those locations [i.e., slightly below 1219 meters (4000 feet)], whichever type vehicle he believes will accommodate the requirement that vehicles meet the section 202 standards wherever sold.

Therefore, while the regulations make it a violation of the Act to sell a low altitude vehicle above 1219 meters (4000 feet), they do not restrict the sale of high altitude vehicles to high altitude areas exclusively. The regulations require that manufacturers take steps to assure themselves that only high altitude vehicles are sold above 1219 meters (4000 feet). For those other locations which the manufacturer determines appropriate, high altitude vehicles may be sold with the constraint that they remain subject to the section 207 (a) and (b) warranties and the section 207(c) recall where the vehicles do not meet the section 202 standards. This approach is deemed appropriate in that it does not arbitrarily limit the consumer who lives at an elevation of 1218 meters (3997 feet) to purchasing a low altitude vehicle, and in that it remains the responsibility of the manufacturer to determine which of his vehicles (i.e., the high altitude or low altitude) actually meets the standards at those locations of initial licensing, registration, or titling which may be slightly below 1219 meters (4000 feet).

Several portions of the proposal have been modified based on the comments received. The contents of the final regulations are as follows:

1. The provision of the NPRM which would have required mileage accumulation on high altitude vehicles at high altitude has been deleted. The regulations promulgated herein allow mileage accumulation on high altitude vehicles to occur at any altitude. The Agency expects that two different approaches to the high altitude emissions problem will be taken by the auto industry. Manufacturers may elect to equip high altitude vehicles either with (1) a fixed calibration allowing vehicles to meet emission standards at one representative altitude, or (2) automatically compensated components allowing vehicles to meet emission standards at any elevation. For vehicles of the first type (operated with

fixed modifications), test vehicles may be modified after mileage accumulation at low altitude to be consistent with the design required for correct operation at high altitude. For vehicles of the second type (operating with automatic compensation), no modification to the test vehicle's emission control system will be made either for mileage accumulation or zero mile testing at any altitude, as the vehicle's emission control system would be designed to meet emission standards at any altitude. Vehicles of both types are required to undergo emission testing at the 6436 kilometer (4000 mile) test point under high altitude conditions.

2. Because the Agency has deleted the requirement to accumulate mileage on high altitude vehicles at high altitude, emission measurements when appropriate may be made on high altitude certification test vehicles using a test technique now reserved for evaluating running changes, i.e., the back-to-back test. Back-to-back tests are run to evaluate the effects of a change to the emission control system made by a manufacturer during the production of a vehicle. The running change test vehicle is tested in the "before" condition (i.e., without the change), modified, and then tested in the "after" condition (i.e., with the change incorporated). In a similar manner, some test vehicles may be evaluated for purposes of determining compliance with the standard by accumulating mileage on a vehicle calibrated for low altitude, testing the vehicle under low altitude conditions, changing the calibration of the vehicle to the high altitude configuration, and then testing the vehicle under high altitude conditions.

3. The NPRM would have required that, beginning with the 1976 model year, new motor vehicles offered for sale at high altitude demonstrate compliance with Federal emission standards at high altitude. Comments in response to the NPRM indicated that:

a. Sufficient test facilities are not currently available to the auto industry to support the development and certification workload should the regulations become effective with the 1976 model year, and

b. Development of emission control systems for vehicles which are capable of meeting the standards at high altitude has not progressed sufficiently to allow the imposition of high altitude certification regulations beginning with the 1976 model year.

EPA has assessed the current availability of high altitude test facilities and has found them to be extremely limited. In addition, EPA agrees that serious lead time considerations exist for the auto industry in developing and certifying vehicles for sale in high altitude locations. Accordingly, the regulations have been revised to become effective for the 1977 model year.

4. To allow flexibility in both industry testing and EPA confirmation of industry test results, the definition of "high altitude conditions" has been added to the final regulations. This added definition will allow high altitude testing to be performed either in a test facility located at 1586 meters (5200 feet), plus or minus 274 meters (900 feet) in elevation, or in a pressure chamber chassis dynamometer under equivalent barometric conditions of 83.48 kPa (24.72 inHg), plus or minus 2.77 kPa (0.82 inHg).

5. One comment suggested that the test fuel specification for vehicles tested at low altitudes was not appropriate when testing vehicles at high altitude. The commenter pointed out that fuels available in high altitude locations are typically lower in volatility than fuels available nationwide, since the reduced barometric pressure at high altitude allows the use of lower volatility fuel. EPA agrees, and has broadened the test fuel specification for vehicles tested at high altitude.

6. The regulations require that manufacturers publish as part of the maintenance instructions to be provided to the ultimate purchaser whatever modifications, if any, need to be performed on high altitude vehicles when moved to a low altitude location. If the vehicle was not designed for conversion to provide for proper functioning at low altitude, the regulations require that the maintenance instructions include a statement to that effect.

7. The NPRM proposed that manufacturers whose projected sales of new vehicles at high altitude is less than 1000 vehicles per engine family may request a reduction in the high altitude test fleet for that engine family. In view of the elimination of the proposed requirement that high altitude test vehicles must accumulate mileage at high altitude (which substantially reduces the test burden associated with high altitude vehicle certification), the provision which would have allowed a reduction in the high altitude test fleet for small-volume manufacturers has been deleted. The regulations contain test requirements for high altitude vehicles which cannot be reduced below the technically supportable sound minimums specified, which are parallel to the already reduced requirements permitted small-volume manufacturers, and which are now not unnecessarily burdensome to the small-volume manufacturer.

8. The State of Colorado requested that EPA consider lowering the 1219 meter (4000 feet) definition of high altitude to 915 meters (3000 feet) to include all of Colorado. For purposes of the high altitude issue, cities in altitudes above 783 meters (2500 feet) were considered. Roughly interpolated data show emission levels at 783 meters (2500 feet) to be unacceptably high. However, that data has been interpolated from test data obtained at or near sea level and test data obtained at 1646 meters (5400 feet) in elevation (Aurora, Colorado). No test facilities exist in the U.S. in the altitude range 783 to 1219 meters (2500 to 4000 feet). While valid technical judgments can be made about the emission levels of vehicles operated above 1219 meters (4000 feet) based on emission data generated at 1646 meters (5400 feet) (i.e., that they exceed the standards), to comment on expected emission levels of vehicles operated at 783 meters (2500 feet) involves much speculation. As the Agency is acting to correct a situation that is undesirable if not unacceptable under the Clean Air Act, i.e., the sale of new motor vehicles which do not comply with emission standards at the location of initial sale, the most technically supportable (based on available data) definition for location of initial sale is above 1219 meters (4000 feet). To lower the definition of high altitude to 783 meters (2500 feet) the Agency would need a data base which demonstrates that new motor vehicles sold at 783 meters (2500 feet) actually do not comply with emission standards at the location of initial sale. No such data base exists. Therefore, the final regulations retain the definition of the affected region as areas above 1219 meters (4000 feet) in elevation.

The regulations promulgated herein require manufacturers to certify new motor vehicles designed for initial sale at high altitudes to comply with emission standards at those altitudes. Vehicles which are not so certified may not be legally sold at high altitudes.

These amendments are applicable to light-duty gasoline-fueled vehicles, light-duty diesel vehicles, and light-duty trucks beginning with the 1977 model year, and are issued under authority of sections 206 and 301 of the Clean Air Act as amended (42 U.S.C. 1857f–5, 1857g) and are effective November 18, 1974.

Dated: October 10, 1974.

JOHN QUARLES,
Acting Administrator.

Part 85, Title 40 of the Code of Federal Regulations as applicable to 1977 and later model year light-duty gasoline-fueled vehicles, light-duty Diesel vehicles, and light-duty trucks, is amended as follows:

1. In § 85.002, paragraph (a) (31) and (32) are revised. As amended, the section reads as follows:

§ 85.002 Definitions.

(a) * * *

(31) "High altitude" means any elevation over 1219 meters (4000 feet).

(32) "High altitude conditions" means a test altitude of 1585 meters (5200 feet), plus or minus 274 meters (900 feet), or equivalent observed barometric test conditions of 83.48 kPa (24.72 inches Hg), plus or minus 2.77 kPa (0.82 inches Hg).

* * * * *

§ 85.003 [Amended]

2. In § 85.003, the following abbreviation is added to the list of abbreviations:

kPa—Kilopascal(s).

3. In § 85.077–4, paragraph (b) is revised. As amended, the section reads as follows:

§ 85.077–4 Required data.

* * * * *

(b) (1) Emission data on such vehicles tested in accordance with the applicable test procedures of this subpart and in such numbers as therein specified, which will show their emissions after zero kilo-

meters (zero miles) and 6436 kilometers (4000 miles) of operation.

(2) Emission data on those vehicles selected under § 85.077–5(b)(5) and tested in accordance with the applicable test procedures of this subpart and in such numbers as therein specified, which shall be tested at zero kilometers (zero miles) at any altitude, and under high altitude conditions after 6436 kilometers (4000 miles) of operation at any altitude.

* * * * *

4. In § 85.077–5, paragraph (b) (5) and (6) are revised. As amended, the section reads as follows:

§ 85.077–5 Test vehicles.

* * * * *

(b) *Emission data vehicles.* * * *

(5) The administrator will also select one vehicle for each engine-system combination within an engine family for which vehicles are to be sold to ultimate purchasers at high altitude.

(6) The Administrator may combine testing requirements for any vehicle selected under subparagraph (5) of this paragraph with the testing requirements for any similar vehicle in the same engine-system combination selected under subparagraphs (2), (3), or (4) of this paragraph by requiring a vehicle selected for testing under subparagraphs (2), (3), or (4) to be modified (if necessary) after mileage accumulation and emission testing for the purpose of demonstrating compliance in accordance with § 85.077–4(b)(2).

* * * * *

5. In § 85.077–6, paragraph (b) is revised. As amended, the section reads as follows:

§ 85.077–6 Maintenance.

* * * * *

(b) (1) Adjustment of engine idle speed on emission data vehicles may be performed once before the 6436 kilometer (4000 mile) test point. Any other engine, emission control system, or fuel system adjustment, repair, removal, disassembly, cleaning, or replacement on emission data vehicles shall be performed only with the advance approval of the Administrator.

(2) Maintenance on emission data vehicles selected under § 85.077–5(b)(5) and permitted to be tested for purposes of § 85.077–4(b)(2) under the provisions of § 85.077–5(b)(6) may be performed in conjunction with emission control system modifications at the 6436 kilometer (4000 mile) test point, and shall be performed in accordance with the maintenance instructions to be provided to the ultimate purchaser required under §§ 85.077–38(a)(3) and (4).

(3) Maintenance on those emission data vehicles selected under § 85.077–5(b)(5) which are not capable of being modified in the field for the purpose of complying with emission standards at an altitude other than intended by the original design, may be performed in conjunction with the emission control system modifications at the 6436 kilometer (4000 mile) test point, and shall be approved in advance by the Administrator.

* * * * *

6. In § 85.077–7, paragraph (a) is revised. As amended, the section reads as follows:

§ 85.077–7 Mileage accumulation and emissions measurement.

* * * * *

(a) (1) Emission data vehicles: Each emission data vehicle shall be driven 6436 kilometers (4000 miles) with all emission control systems installed and operating. Complete exhaust emission and fuel evaporative emission tests (see § 85.077–9(a)) shall be conducted at zero kilometers (zero miles) and 6436 kilometers (4000 miles) unless the Administrator determines, based on data submitted under § 85.077–5(f), that only the exhaust emission tests (see § 85.077–9(b)) shall be conducted at zero kilometers (zero miles) and 6436 kilometers (4000 miles).

(2) The emission data vehicle(s) selected for testing under § 85.077–5(b)(5) shall be driven 6436 kilometers (4000 miles) at any altitude. Emission tests shall be conducted at zero kilometers (zero miles) at any altitude and 6436 kilometers (4000 miles) under high altitude conditions.

(3) The emission data vehicle(s) selected for testing under § 85.077–5(b)(5) and permitted to be tested for purposes of § 85.077–4(b)(2) under the provisions of § 85.077–5(b)(6) shall be driven 6436 kilometers (4000 miles) at low altitude. Emission tests shall be conducted at zero kilometers (zero miles) at low altitude and 6436 kilometers (4000 miles) under both low and high altitude conditions. For the purposes of this subparagraph, low altitude means any elevation less than 549 meters (1800 feet).

* * * * *

7. In § 85.077–10, paragraph (a) is revised. As amended, the section reads as follows:

§ 85.077–10 Gasoline specifications.

(a) Fuel having the following specifications will be used by the Administrator in exhaust and evaporative emission testing. Fuels having the following specifications or substantially equivalent specifications approved by the Administrator shall be used by manufacturers in exhaust and evaporative emission testing, except that the lead and octane specifications do not apply.

Item	ASTM designation	Leaded	Unleaded
Octane, research, minimum	D1656	100	96
Pb. (organic), grams/U.S. gallon		[1] 1.4	0.00–0.05
Distillation range:			
IBP,[2] °F	D86	75–95	75–95
10 percent point, °F	D86	120–135	120–135
50 percent point, °F	D86	200–230	200–230
90 percent point, °F	D86	300–325	300–325
EP, °F (maximum)	D86	415	415
Sulphur, weight percent, maximum	D1266	0.10	.10
Phosphorus, grams/U.S. gallon, maximum		.01	.005
RVP,[3] [4] pounds	D323	8.7–9.2	8.7–9.2
Hydrocarbon composition:			
Olefins, percent, maximum	D1319	10	10
Aeromatics, percent, maximum	D1319	35	35
Saturates	D1319	Remainder	Remainder

[1] Minimum.
[2] For testing at altitudes above 1,219 meters (4,000 feet) the specified range is 75–105.
[3] For testing which is unrelated to fuel evaporative emission control, the specified range is 8.0–9.2.
[4] For testing at altitudes above 1,219 meters (4,000 feet) the specified range is 7.9–9.2.

* * * * *

8. In § 85.077–30, paragraphs (a) (1), (3), (4), and (5) and (b) (1) (i), (ii), and (iv) are revised. As amended, the section reads as follows:

§ 85.077–30 Certification.

(a) (1) If, after a review of the test reports and data submitted by the manufacturer, data derived from any inspection carried out under § 85.006(c), and any other pertinent data or information, the Administrator determines that a test vehicle(s) meets the requirements of the Act and this subpart, he will issue a certificate of conformity with respect to such vehicle(s) except in cases covered by paragraph (c) of this section. The certificate will state which vehicles are certified for sale at high altitude.

* * * * *

(3) A violation of section 203(a)(1) of the Clean Air Act occurs when any manufacturer sells, offers for sale, or delivers for introduction into commerce at high altitude locations any motor vehicle subject to the regulations under the Act which is not covered by a certificate of conformity issued under this subpart, unless such manufacturer has substantial reason to believe that such motor vehicle will not be sold to an ultimate purchaser for use at a high altitude location.

(4) For the purpose of paragraph (a)(3) "high altitude location" means the intended location of registration, licensing, or titling of such motor vehicle by the ultimate purchaser, such location identified by name and altitude.

(5) For the purpose of paragraph (a)(3) determination of "high altitude location" shall rest with the U.S. Geological Survey, as published in that Agency's 1:250,000 scale series of topographic maps for the United States.

(b) (1) * * *

(i) A test vehicle selected under § 85.077–5(b)(2) or (4) shall represent all vehicles in the same engine family of the same engine displacement-exhaust emission control system-evaporative emission control system combination to

be sold below 1219 meters (4000 feet) in elevation.

(ii) A test vehicle selected under § 85.077–5(b)(3) shall represent all vehicles in the same engine family of the same engine displacement-exhaust emission control system-transmission type-fuel system combination to be sold below 1219 meters (4000 feet) in elevation.

* * * * *

(iv) A test vehicle selected under § 85.077–5(b)(5) shall represent all vehicles of the same engine-system combination to be sold at high altitude.

* * * * *

9. In § 85.077–35, paragraph (a)(4)(iv) and (vi) are revised. As amended, the section reads as follows:

§ 85.077–35 Labeling.

(a) * * *

(4) * * *

(iv) Engine tuneup specifications and adjustments, as recommended by the manufacturer in accordance with the altitude at which the vehicle is to be sold to the ultimate purchaser, including but not limited to, idle speed, ignition timing, and the idle air-fuel mixture setting procedure and value (e.g., idle CO, idle air-fuel ratio, idle speed drop). These specifications should indicate the proper transmission position during tuneup and what accessories (e.g., air-conditioner), if any, should be in operation.

* * * * *

(vi) The altitude at which the vehicle is intended for sale to the public as specified by a certificate of conformity under § 85.077–30(a).

* * * * *

10. In § 85.077–38, paragraph (a)(3) and (4) are revised. As amended, the section reads as follows:

§ 85.077–38 Maintenance instructions.

(a) * * *

(3) Such instructions shall indicate, for vehicles to be sold to ultimate purchasers at low altitude, what adjustments or modifications, if any, are necessary to allow the vehicle to meet emissions standards at high altitude. The maintenance instructions shall, if applicable, include a statement that the vehicle's emission control system was not designed for conversion to allow the vehicle to meet emissions standards when operated at high altitude.

(4) Such instructions shall indicate, for vehicles to be sold to ultimate purchasers at high altitude, what adjustments or modifications, if any, are necessary to allow the vehicle to meet emissions standards at low altitude. The maintenance instructions shall, if applicable, include a statement that the vehicle's emission control system was not designed for conversion to allow the vehicle to meet emissions standards when operated at low altitude.

* * * * *

11. In § 85.102, paragraphs (a)(24) and (25) are revised. As amended, the section reads as follows:

§ 85.102 Definitions.

(a) * * *

(24) "High altitude" means any elevation over 1219 meters (4000 feet).

(25) "High altitude conditions" means a test altitude of 1585 meters (5200 feet), plus or minus 274 meters (900 feet), or equivalent observed barometric test conditions of 83.48 kPa (24.72 inches Hg), plus or minus 2.77 kPa (0.82 inches Hg).

* * * * *

§ 85.103 [Amended]

12. In § 85.103, the following abbreviation is added to the list of abbreviations:

kPa—Kilopascal(s).

13. In § 85.177–4, paragraph (b) is revised. As amended, the section reads as follows:

§ 85.177–4 Required data.

* * * * *

(b)(1) Emission data on such vehicles tested in accordance with the applicable test procedures of this subpart and in such numbers as therein specified, which will show their emissions after zero kilometers (zero miles), and 6436 kilometers (4000 miles) of operation.

(2) Emission data on those vehicles selected under § 85.177–5(b)(5) and tested in accordance with the applicable test procedures of this subpart and in such numbers as therein specified, which shall be tested at zero kilometers (zero miles) at any altitude, and under high altitude conditions after 6436 kilometers (4000 miles) of operation at any altitude.

* * * * *

14. In § 85.177–5, paragraphs (b)(5) and (6) are revised. As amended, the section reads as follows:

§ 85.177–5 Test vehicles.

* * * * *

(b) *Emission data vehicles* * * *

(5) The Administrator will also select one vehicle for each engine-system combination within an engine family for which vehicles are to be sold to ultimate purchasers at high altitude.

(6) The Administrator may combine testing requirements for any vehicle selected under subparagraph (5) of this paragraph with the testing requirements for any similar vehicle in the same engine-system combination selected under subparagraphs (2), (3), or (4) of this paragraph by requiring a vehicle selected for testing under subparagraphs (2), (3), or (4) to be modified (if necessary) after mileage accumulation and emission testing for the purpose of demonstrating compliance in accordance with § 85.177–4(b)(2).

* * * * *

15. In § 85.177–6, paragraph (b) is revised. As amended, the section reads as follows:

§ 85.177–6 Maintenance.

* * * * *

(b)(1) Adjustment of engine idle speed on emission data vehicles may be performed once before the 6436 kilometer (4000 mile) test point. Any other engine, emission control system, or fuel system adjustment, repair, removal, disassembly, cleaning, or replacement on emission data vehicles shall be performed only with the advance approval of the Administrator.

(2) Maintenance on emission data vehicles selected under § 85.177–5(b)(5) and permitted to be tested for purposes of § 85.177–4(b)(2) under the provisions of § 85.177–5(b)(6) may be performed in conjunction with emission control system modification at the 6436 kilometer (4000 mile) test point, and shall be performed in accordance with the maintenance instructions to be provided to the ultimate purchaser required under §§ 85.177–38(a)(3) and (4).

(3) Maintenance on those emission data vehicles selected under § 85.177–5(b)(5) which are not capable of being modified in the field for the purpose of complying with emission standards at an altitude other than intended by the original design may be performed in conjunction with the emission control system modifications at the 6436 kilometer (4000 mile) test point, and shall be approved in advance by the Administrator.

* * * * *

16. In § 85.177–7, paragraph (a) is revised. As amended, the section reads as follows:

§ 85.177–7 Mileage accumulation and emissions measurement.

* * * * *

(a)(1) Emission data vehicles: Each emission data vehicle shall be driven 6436 kilometers (4000 miles) with all emission control systems installed and operating. Emission tests shall be conducted at zero kilometers (zero miles) and 6436 kilometers (4000 miles).

(2) The emission data vehicle(s) selected for testing under § 85.177–5(b)(5) shall be driven 6436 kilometers (4000 miles) at any altitude. Emission tests shall be conducted at zero kilometers (zero miles) at any altitude and 6436 kilometers (4000 miles) under high altitude conditions.

(3) The emission data vehicle(s) selected for testing under § 85.177–5(b)(5) and permitted to be tested for purposes of § 85.177–4(b)(2) under the provisions of § 85.177–5(b)(6) shall be driven 6436 kilometers (4000 miles) at low altitude. Emission tests shall be conducted at zero kilometers (zero miles) at low altitude and 6436 kilometers (4000 miles) under both low and high altitude conditions. For the purpose of this subparagraph, low altitude means any elevation less than 549 meters (1800 feet).

* * * * *

17. In § 85.177–30 paragraphs (a)(1), (3), (4), and (5) and (b)(1)(i), (ii), and (iv) are revised. As amended, the section reads as follows:

§ 85.177–30 Certification.

(a)(1) If, after a review of the test reports and data submitted by the manufacturer, data derived from any inspection carried out under § 85.106(c), and any other pertinent data or in-

formation, the Administrator determines that a test vehicle(s) meets the requirements of the Act and this subpart, he will issue a certificate of conformity with respect to such vehicle(s) except in cases covered by paragraph (c) of this section. The certificate will state which vehicles are certified for sale at high altitude.

* * * * *

(3) A violation of section 203(a)(1) of the Clean Air Act occurs when any manufacturer sells, offers for sale, or delivers for introduction into commerce at high altitude locations any motor vehicle subject to the regulations under the Act which is not covered by a certificate of conformity issued under this subpart, unless such manufacturer has substantial reason to believe that such motor vehicle will not be sold to an ultimate purchaser for use at a high altitude location.

(4) For the purpose of paragraph (a)(3) "high altitude location" means the intended location of registration, licensing, or titling of such motor vehicle by the ultimate purchaser, such location identified by name and altitude.

(5) For the purpose of paragraph (a)(3) determination of "high altitude location" shall rest with the U.S. Geological Survey, as published in that Agency's 1:250 000 scale series of topographic maps for the United States.

(b) (1) * * *

(i) A test vehicle selected under §§ 85.177–5(b)(2) or (4) shall represent all vehicles in the same engine family of the same engine displacement-exhaust emission control system-evaporative emission control system combination to be sold below 1,219 meters (4,000 feet) in elevation.

(ii) A test vehicle selected under § 85.177–5(b)(3) shall represent all vehicles in the same engine family of the same engine displacement-exhaust emission control system-transmission type-fuel system combination to be sold below 1,219 meters (4,000 feet) in elevation.

* * * * *

(iv) A test vehicle selected under § 85.177–5(b)(5) shall represent all vehicles of the same engine-system combination to be sold at high altitude.

* * * * *

18. In § 85.177–35, paragraph (a)(4)(iv) and (vi) are revised. As amended, the section reads as follows:

§ 85.177–35 Labeling.

(a) * * *

(4) * * *

(iv) Engine tuneup sepcifications and adjustments, as recommended by the manufacturer in accordance with the altitude at which the vehicle is to be sold to the ultimate purchaser, including, but not limited to, low and high idle speeds, initial injection timing, valve lash, and aneriod adjustment, if any, as well as other parameters deemed necessary by the manufacturer. These specifications should indicate the proper transmission position during tuneup and what accessories (e.g., air-conditioner), if any, should be in operation.

* * * * *

(vi) The altitude at which the vehicle is intended for sale to the public as specified by a certificate of conformity under § 85.177–30(a).

* * * * *

19. In § 85.177–38, paragraph (a)(3) and (4) are revised. As amended, the section reads as follows:

§ 85.177–38 Maintenance instructions.

(a) * * *

(3) Such instructions shall indicate, for vehicles to be sold to ultimate purchasers at low altitude, what adjustments or modifications, if any, are necessary to allow the vehicle to meet emissions standards at high altitude. The maintenance instructions shall, if applicable, include a statement that the vehicle's emission control system was not designed for conversion to allow the vehicle to meet emissions standards when operated at high altitude.

(4) Such instructions shall indicate, for vehicles to be sold to ultimate purchasers at high altitude, what adjustments or modifications if any, are necessary to allow the vehicle to meet emissions standards at low altitude. The maintenance instructions shall, if applicable, include a statement that the vehicle's emission control system was not designed for conversion to allow the vehicle to meet emission standards when operated at low altitude.

* * * * *

20. In § 85.202, paragraph (a)(29) and (30) are revised. As amended, the section reads as follows:

§ 85.202 Definitions.

(a) * * *

(29) "High altitude" means any elevation over 1219 meters (4000 feet).

(30) "High altitude conditions" means a test altitude of 1585 meters (5200 feet), plus or minus 274 meters (900 feet), or equivalent observed barometric test conditions of 83.48 kPa (24.72 inches Hg), plus or minus 2.77 kPa (0.82 inches Hg).

* * * * *

§ 85.203 [Amended].

21. In § 85.203, the following abbreviation is added to the list of abbreviations:

kPa—Kilopascal(s).

22. In § 85.277–4, paragraph (b) is revised. As amended, the section reads as follows:

§ 85.277–4 Required data.

* * * * *

(b) (1) Emission data on such vehicles tested in accordance with the applicable test procedures of this subpart and in such numbers as therein specified, which will show their emissions after zero kilometers (zero miles) and 6436 kilometers (4000 miles) of operation.

(2) Emission data on those vehicles selected under § 85.277–5(b)(5) and tested in accordance with the applicable test procedures of this subpart and in such numbers as therein specified, which shall be tested at zero kilometers (zero miles) at any altitude, and under high altitude conditions after 6436 kilometers (4000 miles) of operation at any altitude.

* * * * *

23. In § 85.277–5, paragraph (b)(5) and (6) are revised. As amended, the section reads as follows:

§ 85.277–5 Test vehicles.

* * * * *

(b) *Emission data vehicles* * * *

(5) The Administrator will also select one vehicle for each engine-system combination within an engine family for which vehicles are to be sold to ultimate purchasers at high altitude.

(6) The Administrator may combine testing requirements for any vehicle selected under subparagraph (5) of this paragraph with the testing requirements for any similar vehicle in the same engine-system combination selected under subparagraph (2), (3), or (4) of this paragraph by requiring a vehicle selected for testing under subparagraph (2), (3), or (4) to be modified (if necessary) after mileage accumulation and emission testing for the purpose of demonstrating compliance in accordance with § 85.277–4(b)(2).

* * * * *

24. In § 85.277–6, paragraph (b) is revised. As amended, the section reads as follows:

§ 85.277–6 Maintenance.

* * * * *

(b) (1) Adjustment of engine idle speed on emission data vehicles may be performed once before the 6436 kilometer (4000 mile) test point. Any other engine, emission control system, or fuel system adjustment, repair, removal, disassembly, cleaning, or replacement on emission data vehicles shall be performed only with the advance approval of the Administrator.

(2) Maintenance on emission data vehicles selected under § 85.277–5(b)(5) and permitted to be tested for purposes of § 85.277–4(b)(2) under the provisions of § 85.277–5(b)(6), may be performed in conjunction with emission control system modifications at the 6436 kilometer (4000 mile) test point, and shall be performed in accordance with the maintenance instructions to be provided to the ultimate purchaser required under §§ 85.277–38(a)(3) and (4).

(3) Maintenance on those emission data vehicles selected under § 85.277–5(b)(5) which are not capable of being modified in the field for the purpose of complying with emission standards at an altitude other than intended by the original design may be performed in conjunction with the emission control system modifications at the 6436 kilometer (4000 mile) test point, and shall be approved in advance by the Administrator.

* * * * *

25. In § 85.277–7, paragraph (a) is revised. As amended, the section reads as follows:

§ 85.277–7 Mileage accumulation and emissions measurement.

* * * * *

(a) (1) Emission data vehicles: Each emission data vehicle shall be driven 6436 kilometers (4000 miles) with all emission control systems installed and operating. Complete exhaust emission and fuel evaporative emission tests (see § 85.277–9(a)) shall be conducted at zero kilometers (zero miles) and 6436 kilometers (4000 miles) unless the Administrator determines, based on data submitted under § 85.277–5(f), that only the exhaust emission tests (see § 85.277–9(b)) shall be conducted at zero kilometers (zero miles) and 6436 kilometers (4000 miles).

(2) The emission data vehicle(s) selected for testing under § 85.277–5(b)(5) shall be driven 6436 kilometers (4000 miles) at any altitude. Emission tests shall be conducted at zero kilometers (zero miles) at any altitude and 6436 kilometers (4000 miles) under high altitude conditions.

(3) The emission data vehicle(s) selected for testing under § 85.277–5(b)(5) and permitted to be tested for purposes of § 85.277–4(b)(2) under the provisions of § 85.277–5(b)(6) shall be driven 6436 kilometers (4000 miles) at low altitude. Emission tests shall be conducted at zero kilometers (zero miles) at low altitude and 6436 kilometers (4000 miles) under both low and high altitude conditions. For the purpose of this subparagraph, low altitude means any elevation less than 549 meters (1800 feet).

* * * * *

26. In § 85.277–10, paragraph (a) is revised. As amended, the section reads as follows:

§ 85.277–10 Gasoline specifications.

(a) Fuel having the following specifications will be used by the Administrator in exhaust and evaporative emission testing. Fuels having the following specifications or substantially equivalent specifications approved by the Administrator shall be used by manufacturers in exhaust and evaporative emission testing, except that the lead and octane specification do not apply.

Item	ASTM designation	Leaded	Unleaded
Octane, research, minimum	D1656	100	96
Pb. (organic), grams/U.S. gallon		[1] 1.4	0.00–0.5
Distillation range:			
IBP [2], °F	D86	75–95	75–95
10 percent point, °F	D86	120–135	120–135
50 percent point, °F	D86	200–230	200–230
90 percent point, °F	D86	300–325	300–325
EP, °F (maximum)	D86	415	415
Sulphur, weight percent, maximum	D1266	0.10	.10
Phosphorus, grams/U.S. gallon, maximum		.01	.005
RVP, [3] [4] pounds	D323	8.7–9.2	8.7–9.2
Hydrocarbon composition:			
Olefins, percent, maximum	D1319	10	10
Aeromatics, percent, maximum	D1319	35	35
Saturates	D1319	Remainder	Remainder

[1] Minimum.
[2] For testing at altitudes above 1,219 meters (4,000 feet) the specified range is 75–105.
[3] For testing which is unrelated to fuel evaporative emission control, the specified range is 8.0–9.2.
[4] For testing at altitudes above 1,219 meters (4,000 feet) the specified range is 7.9–9.2.

* * * * *

27. In § 85.277–30, paragraphs (a)(1), (3), (4), and (5) and (b)(1)(i), (ii), and (iv) are revised. As amended, the section reads as follows:

§ 85.277–30 Certification.

(a)(1) If, after a review of the test reports and data submitted by the manufacturer, data derived from any inspection carried out under § 85.206(c), and any other pertinent data or information, the Administrator determines that a test vehicle(s) meets the requirements of the Act and this subpart, he will issue a certificate of conformity with respect to such vehicle(s) except in cases covered by paragraph (c) of this section. The certificate will state which vehicles are certified for sale at high altitude.

* * * * *

(3) A violation of section 203(a)(1) of the Clean Air Act occurs when any manufacturer sells, offers for sale, or delivers for introduction into commerce at high altitude locations any motor vehicle subject to the regulations under the Act which is not covered by a certificate of conformity issued under this subpart, unless such manufacturer has substantial reason to believe that such motor vehicle will not be sold to an ultimate purchaser for use at a high altitude location.

(4) For the purpose of paragraph (a)(3) "high altitude location" means the intended location of registration, licensing, or titling, of such motor vehicle by the ultimate purchaser, such location identified by name and altitude.

(5) For the purpose of paragraph (a)(3) determination of "high altitude location" shall rest with the U.S. Geological Survey, as published in that Agency's 1:250 000 scale series of topographic maps for the United States.

(b)(1) * * *

(i) A test vehicle selected under §§ 85.277–5(b)(2) or (4) shall represent all vehicles in the same engine family of the same engine displacement-exhaust emission control system-evaporative emission control system combination to be sold below 1219 meters (4000 feet) in elevation.

(ii) A test vehicle selected under § 85.277–5(b)(3) shall represent all vehicles in the same engine family of the same engine displacement-exhaust emission control system-transmission type-fuel system combination to be sold below 1219 meters (4000 feet) in elevation.

* * * * *

(iv) A test vehicle selected under § 85.277–5(b)(5) shall represent all vehicles of the same engine-system combination to be sold at high altitude.

* * * * *

28. In § 85.277–35, paragraph (a)(4)(iv) and (vi) are revised. As amended, the section reads as follows:

§ 85.277–35 Labeling.

(a) * * *

(4) * * *

(iv) Engine tuneup specifications and adjustments, as recommended by the manufacturer in accordance with the altitude at which the vehicle is to be sold to the ultimate purchaser, including, but not limited to, idle speed, ignition timing, and the idle air-fuel mixture setting procedure and value (e.g., idle CO, idle air-fuel ratio, idle speed drop). These specifications should indicate the proper transmission position during tuneup and what accessories (e.g., air-conditioner), if any, should be in operation.

* * * * *

(vi) The altitude at which the vehicle is intended for sale to the public as specified by a certificate of conformity under § 85.277–30(a).

* * * * *

29. In § 85.277–38, paragraph (a)(3) and (4) are revised. As amended, the section reads as follows:

§ 85.277–38 Maintenance instructions.

(a) * * *

(3) Such instructions shall indicate, for vehicles to be sold to ultimate purchasers at low altitude, what adjustments or modifications, if any, are necessary to allow the vehicle to meet emissions standards at high altitude. The maintenance instructions shall, if applicable, include a statement that the vehicle's emission control system was not designed for conversion to allow the vehicle to meet emissions standards when operated at high altitude.

(4) Such instructions shall indicate, for vehicles to be sold to ultimate purchasers at high altitude, what adjustments or modifications if any, are necessary to allow the vehicle to meet emissions standards at low altitude. The maintenance instructions shall, if applicable include a statement that the vehicle's emission control system was not designed for conversion to allow the vehicle to meet emissions standards when operated at low altitude.

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